REMARKS

The Examiner rejected claims 1-22 under 35 U.S.C. §103(a) as being unpatentable over Linkser, US Patent No. 4615011 in view of Varadarajan et al, US Patent No. 5838583. In this Amendment, Applicant has amended claim 1 and canceled claim 2 and 3. Accordingly, claims 1 and 4-22 will be pending after entry of this Amendment.

I. Rejection of Claims 1 and 4-22 Under §103(a)

In the Office Action, the Examiner rejected claims 1 and 4-22 under §103(a) as being unpatentable over Linkser, in view of Varadarajan et al. (Varadarajan).

Claims 4-22 are dependent directly or indirectly on claim 1. Claim 1 recites a method of routing a net that has a set of source routable elements and a set of target routable elements. The method identifies an acceptable number of at least two paths between the set of source routable elements and the set of target routable elements. The method identifies the set of paths by performing the following operations. It specifies a first total cost and performs a first depth-first search to identify <u>at least two paths</u> that each has a cost that does not exceed the first total cost. Each path in the set includes a set of expansions from the set of routable-element sources to the set of routable-element targets. If the search cannot find the acceptable number of <u>two or more paths</u>, the method increments the total cost and performs a second depth-first search to identify the set of paths that each has a cost that does not exceed the incremented total cost. When the acceptable number of paths is identified, the method uses one of the paths to define a route for the net.

Applicants respectfully submit that Linsker does not disclose, teach, or even suggest such a method. Instead, Linsker only discloses performing a path search to identify a path between a source element and a target element. Specifically, Linsker uses a multi-pass

routing method that in each pass removes a connection not previously considered in the pass (Figure 6a, 348). The method then reroutes the connection using a certain criteria (Figure 6a, 348). If the path satisfies minimum and maximum length constraints (Figure 6a, 372) and the connection satisfies other specified penalty function costs (Figure 6b, 436), it is determined whether all of the connections have been considered for reroute in the current pass (Figure 6b, 492). The method then iterates until all connections are considered and reroutes the connection according to the above-described method. Accordingly, Linsker does not identify a set of two or more paths between source and target elements. Specifically, Linsker at any time identifies only one path between the source and target elements. This is in contrast with the method of the current invention that finds at least two paths between the source and target elements and if at least two paths cannot be found at a given cost, increments the cost to find the minimum number of two or more paths. Once at least two paths are defined, then the current invention selects one of the paths to define the route.

In accordance to the above arguments, the applicants have canceled claims 2 that recites the acceptable number of paths to be one and has merged claim 3 into claim 1. Accordingly, Applicants respectfully submit that the cited references do not render claim 1 unpatentable. As Claims 4-22 are dependent on claim 1, Applicants respectfully submit that claims 1 and 4-22 are patentable over Linsker and/or Varadarajan for at least the reasons that were discussed above in relation to claim 1.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §103(a) rejection of claims 1, and 4-22.

CONCLUSION

In view of the foregoing, it is submitted that all pending claims, namely claims 1 and

4-22, are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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